

In 1996, the Commission declined to include packet switching as a mandatory element because so few parties commented on the issue. 130/ Today, three years later, it has become clear that there is widespread interest in access to this network element, as evidenced by the comments in the Advanced Services Proceeding, CC Docket No. 98-147.

The Commission made it clear in its Advanced Services Order that the local market-opening provisions of the 1996 Act applied equally to circuit and packet technologies. 131/ The Commission should clarify its rules to specify that competitors have access to ILEC packet switching capability, just as they do to circuit switching. CLECs would be impaired in their ability to compete with ILECs in the provision of advanced services without access to ILEC local packet switching and packet transport, just as they would be without access for circuit switching and transport. There is no wholesale market today for these network elements.

4. Interoffice Transmission

a. Dedicated Transport

Dedicated transport must remain a mandatory network element. The threshold facility in an alternative local network is the interoffice transmission matrix that links central offices. Although new entrants are beginning to deploy

130/ Id. at ¶ 427.

131/ Deployment of Wireline Services Offering Advanced Telecommunications Capability, CC Docket No. 98-147, et al., Memorandum Opinion and Order and Notice of Proposed Rulemaking, FCC 98-188 (rel. Aug. 7, 1998), at ¶¶ 11, 35, 40, 49 (“Advanced Services Order”).

alternative interoffice facilities, these facilities today remain highly concentrated and connect to only a few central offices in a state or region. Before a wholesale dedicated transport *market* can be said to exist, these competitive networks must reach a critical mass of central offices to provide other entrants a viable alternative footprint to the ILEC. As a writer in the ILEC industry trade association (USTA) magazine has observed:

The ILEC's carrier customers want to view as interchangeable all of their HICAP services in a geographic area, and they want to maximize their use of these leased facilities.^{132/}

Today, CLEC networks compete, in part, by relying on ILEC facilities to achieve the critical mass to offer commercially viable dedicated transport services. Even though an *individual* dedicated transport circuit may have a precisely defined geographic application, the ability to compete in the *market* for these services requires that competitors be able to meet the customer's potential needs more broadly. Further, for a functioning wholesale market to be sustained, CLEC networks must practically achieve cost levels comparable to those of the ILEC. This means that the cost to terminate (i.e., collocate) CLEC transmission and cross-connect systems in ILEC conditioned central office space must be comparable to the ILEC's own cost, and that CLECs have achieved a sufficient market share to realize scale economies. Neither of these conditions exist today.

^{132/} Arias, Salvador, "Wholesale Marketing Strategy: A Changing Portfolio of Opportunities," Teletimes, United States Telephone Association, Vol. 12, No. 3 (1998) at 20.

First, as noted above, CLEC interoffice networks are simply not as extensive as ILEC networks. This has two effects. One, even carriers that wish to move as much of their local transmission needs to the CLEC as possible must still maintain their existing relationship with the ILEC. This means that *all* of the contract administration, vendor coordination and procurement costs incurred to obtain piecemeal service from the CLEC are *incremental* costs to the customer. CLEC pricing must be discounted first to offset these costs simply so that the customer is *indifferent* between the CLEC and ILEC; additional discounts are likely to be necessary to attract the business itself. Second, the more limited span of the CLEC network reduces the traffic volumes that it will be likely to carry, further diminishing its potential scale.

Second, although the FCC's most recent collocation decision holds the *promise* of reduced collocation charges (and, as one consequence, more extensive network development), this order has not yet been implemented. 133/ The order has been appealed, moreover, by at least one ILEC. Before the fruits of this policy can be realized, ILECs must make available the simpler, and more cost effective, forms of collocation envisioned by that decision. Even then, however, it will take time and market experience for CLEC transport networks to evolve to a point where they have comparable scale, scope and geographic coverage as the ILECs.

133/ Deployment of Wireline Services Offering Advanced Telecommunications Capability, CC Docket No. 98-147, First Report and Order and Further Notice of Proposed Rulemaking, FCC 99-48 (rel. March 31, 1999).

As one measure of ILEC transport dominance, consider the following market share for the most “competitive” dedicated service, dedicated transport for access service. The vast majority of dedicated transport demand can be found with three customers (AT&T, MCI/WorldCom and Sprint), each of whom has a strong strategic motivation to move its access business to a competitor (in addition to any cost savings). To further foster competition in the transport market, FCC rules provide customers that use an alternative to the ILEC for dedicated access transport a discount on the residual interconnection charge (over and above any discount offered by the competitive provider (CAP)). Despite these conditions, however, Bell Atlantic-South, for example, continues to enjoy an 88 percent market share after nearly five years of “competition.”^{134/}

As discussed above, the Commission must measure the existence of a wholesale market for transport over a sufficiently large geographic area for that market to be a viable one from both the point of view of the supplier of the network element and the purchaser. It would defy reason and commercial reality for the Commission to rely upon the existence of competing facilities between two end offices as evidence that there is a wholesale market for the dedicated transport element between those two offices. The transport market is not defined that way -- by the ILEC or anyone else. Rather, a requesting carrier wishing to enter a new market (or to substitute dedicated transport for shared transport) will approach

¹³⁴ Source: Bell Atlantic Transmittal BATR98r.wk3, accompanying Bell Atlantic Transmittal No. 1065 (July 23, 1998).

transport vendors with a request to have dedicated facilities installed in a number of locations. If the requesting carrier had to research where competitive facilities existed, and then negotiate with each provider separately, and then work out coordinated provisioning for diverse transport facilities, this would be an enormous burden -- certainly qualifying as "impairment." In addition, obtaining piece parts of dedicated transport is not likely to be anywhere near as cost-effective as obtaining all transport from the ILEC.

In the above example, we have not even addressed the question of whether competitively provided dedicated transport is "interchangeable" with the ILEC's transport as an operational matter. For example, ILEC systems are not in place to integrate competitively provided transport with other network elements acquired from the ILEC, or to permit the seamless integration of CLEC-supplied dedicated transport with ILEC-supplied. This is not to say that such impairments could not be removed -- indeed, in our view, the overarching purpose of the Act is to see that such impairments *are* removed. If ILECs would like to take dedicated transport off the UNE list, they have incentives to work with competitors to remove those impairments.

Finally, as part of the wholesale-market test, the Commission would of course need to examine whether the owners of the competing facilities are acting as wholesale transport providers. These owners, for example, may not have spare capacity, or may have operational problems in selling to other carriers (an

interchangeability problem). The Commission's findings in the Local Competition Order, therefore, remain true today:

The opportunity to purchase unbundled interoffice facilities will decrease the cost of entry compared to the *much* higher cost that would be incurred by an entrant that had to construct all of its own facilities. 135/

In sum, dedicated transport must remain a UNE on a nationwide basis. It remains an essential input in the transport offerings of others, and there is no evidence of interchangeability or of a competitively functioning wholesale market of reasonable geographic reach in any area of the country.

b. Shared Transport.

In 1997, the Commission made clear that shared transport is a mandatory network element. 136/ Its reasoning in that decision makes it plain that under any interpretation of the "necessary and impair" test, shared transport would qualify as a mandatory element. According to that decision, lack of access to shared transport would impair the ability of competitive carriers to provide services in several respects. For example, the Commission found that:

requiring competitive carriers to use dedicated transport facilities during the initial stages of competition would create a significant barrier to entry because dedicated

135/ Local Competition Order, 11 FCC Rcd at 15718, ¶ 441 (emphasis added).

136/ Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket Nos. 96-98, 95-185, Third Order on Reconsideration and Further Notice of Proposed Rulemaking, FCC 97-295, released August 18, 1997, aff'd, Southwestern Bell Tel. Co. v. FCC, Case. No. 97-3389 (8th Cir., August 10, 1998) ("Shared Transport Order").

transport is not economically feasible at low penetration rates. 137/

In addition, the Commission found that if competitors were forced to use only dedicated transport, new entrants “would be hindered by significant transaction costs” caused by continually having to reconfigure the unbundled transport elements as they acquired customers. 138/ Accordingly, the Commission concluded that lack of access to shared interoffice transport would

significantly increase the requesting carriers’ costs of providing local exchange service and thus reduce competitive entry into that local exchange market. 139/

The Commission also concluded that access to shared transport “is particularly important for stimulating initial competitive entry into the local exchange market” because “if new entrants were forced to rely on dedicated transport facilities, . . . , they would almost inevitably miscalculate [traffic volumes] or routing patterns.” 140/ Furthermore, the Commission concluded that requiring ILECs to make transport facilities available on a shared basis would assure that the ILECs’ “significant economies of scope, scale, and density in providing transport facilities” would be “passed on to competitive carriers.” 141/

137/ Id. at ¶ 35.

138/ Id. at ¶ 35.

139/ Id. at ¶ 34.

140/ Id. at ¶ 35.

141/ Id.

The Commission's reasoning in the 1997 order also satisfies the Qwest wholesale market test. As the Commission stated,

the need for access to all of the incumbent LEC's facilities on a shared basis may decrease as competitive carriers expand their customer base and have an opportunity to identify traffic volumes and call routing patterns. 142/

The Commission also stated that it could re-evaluate whether an ILEC must continue to provide access to shared transport as a UNE:

if, in the future, competitive carriers gain sufficient market penetration to justify obtaining dedicated transport facilities, either through the use of unbundled elements or through building their [own] facilities. 143/

Based on the FCC's findings in its 1997 order, and based on the continuing validity of those findings, the Commission should require shared transport to be a mandatory network element.

c. Packet Transport

The Commission should also update its network element rules to clarify that packet transport is a mandatory network element. Packet technology is becoming increasingly common in the local network, and access to this technology is essential if entrants are to be able to compete effectively in the provision of advanced services. As stated in the CompTel Proposed Rule 51.319(d)(3), packet transport includes "all features, functions and capabilities of the ILEC's packet

142/ Id.

143/ Id. at ¶ 35, n.95.

transport network,” including all intermediate switching or routing (as such capabilities are inherent in packet transport.

The packet transport definition is intentionally broad to reflect the robust nature of this transmission technology. Like the Commission’s own definition of shared transport, the packet transport definition encompasses a number of different configurations. For instance, the definition could include basic ATM transport between an interconnection with a CLEC’s ATM network and a customer location on the ILEC’s ATM network. Another example of packet transport would be between the CLEC’s frame relay network and a DSLAM in an ILEC’s central office. Still another packet transport configuration could be used to extend a CLEC’s data service from its packet switch all the way to the customer’s packet device, such as an ATU-remote unit, and would include all intermediate packet routing/conversion such as DSL transport and use of the DSLAM. Packet networks take many forms and the packet transport network element should be defined to keep pace with this innovative technology.

5. Signaling Networks and Call-Related Databases

The Commission should include signaling and call-related databases in the list of mandatory network elements as well. As features, functions, and capabilities provided by network facilities and equipment, signaling and call-related databases fall squarely within the definition of “network element.” 144/

144/ 47 U.S.C. § 153(29); see also AT&T v. Iowa Utilities Board, 119 S.Ct. at 734.

Competitive carriers would clearly be impaired in their ability to provide service if they were unable to obtain access to the ILECs' signaling and call-related databases. Signaling systems set up and control the routing of calls among switches and among switches and call-related databases. Call-related databases, in turn, supply the customer information or instructions necessary for this call routing.

Access to the ILECs' signaling systems and call-related databases is thus critical to permitting the seamless routing and completion of traffic both among competitors and between competitors and the ILEC. Access to signaling and call-related databases also is essential to enabling competitive carriers to provide services at costs comparable to those of the ILECs.

Furthermore, access to signaling systems and call-related databases is necessary for interconnection with the ILECs' networks. Indeed, regardless of whether or not signaling is considered a UNE in its own right, the Commission has concluded that ILECs must provide competitors with access to signaling systems and call-related databases in providing interconnection. 145/

As noted in the Local Competition Order, Senator Pressler stated during debate on the 1996 Act that "access to signaling and databases [is] important if you are going to compete and get into the market." 146/ Moreover,

145/ Local Competition Order, 11 FCC Rcd at 15738, ¶ 478.

146/ Id. at 15738, ¶ 479 n.1113, *quoting* Statement of Sen. Pressler, 141 Cong. Rec. S8163 (June 12, 1995).

Congress expressly acknowledged the importance of access to signaling and call-related databases by adding in Section 271 that RBOCs must provide competitors with “nondiscriminatory access to databases and associated signaling necessary for call routing and completion” as a precondition for receiving in-region, interLATA authority. 147/

Denying CLECs access to the ILECs’ ubiquitous signaling networks and call-related databases would impose substantial costs on competitors and significantly delay their ability to provide service. For example, the Commission found in the Local Competition Order that the deployment of call-related databases by competitors would “represent a substantial cost to new entrants.” 148/ The Commission also found that

requiring entrants to bear the cost of deploying a fully redundant network architecture, including AIN databases and their application software, would constitute a significant barrier to market entry for competitive carriers. 149/

Accordingly, the Commission concluded that denying access to call-related databases “would impair the ability of a competing provider to offer services such as Alternative Billing Services and AIN-based services.” 150/ These factual findings equal impairment under any fair reading of that term.

147/ 47 U.S.C. §§ 271(c)(2)(B)(x).

148/ Local Competition Order, 11 FCC Rcd at 15744, ¶ 491.

149/ Id. at 15744, ¶ 489.

150/ Id. at 15744, ¶ 491.

Denying CLECs access to signaling and call-related databases would further disadvantage competitors vis-a-vis the ILECs because the ILECs possess the vast majority of information necessary to populate the information in the call-related databases. An inability to obtain access to the ILECs' signaling systems and call-related databases, therefore, would significantly impair the ability of competitors to provide service using either network elements or interconnection. Accordingly, the Commission should include signaling and call-related databases as mandatory UNEs.

6. Operations Support Systems

The Commission also should include OSS in its list of mandatory UNEs. The Supreme Court expressly confirmed that OSS constitutes a network element under Section 3(29) of the Act, so there is no question whether OSS qualifies as a network element. 151/

OSS also clearly meets any reasonable reading of the "necessary and impair" standard of Section 251(d)(2). Lack of access to the ILECs' OSS would drastically increase the costs and delays associated with a CLEC's ability to provide services using any entry method -- network elements, interconnection, or the resale of services. Thus, lack of access to the ILECs' OSS would severely impair the ability of competitive carriers to provide services. There are obviously no "interchangeable" OSS offerings available today, as CLECs remain dependent on

151/ AT&T v. Iowa Utilities Board, 119 S.Ct. at 734.

operational interfaces with ILEC OSS to obtain access to other ILEC network elements, interconnection, resale, and other Section 251(c) items.

As the Supreme Court stated, “OSS, the incumbent’s background software system, contains essential network information as well as programs to manage billing, repair[,] ordering, and other functions.” 152/ Similarly, as the Commission explained in the Local Competition Order, “it is the ILECs’ OSS that determine, in large part, the speed and efficiency with which incumbent LECs can market, order, provision, and maintain telecommunications services and facilities.” 153/

The Commission correctly concluded in the Local Competition Order that:

the massive operations support systems employed by incumbent LECs, and the information such systems maintain and update to administer telecommunications networks and services, represent a significant potential barrier to entry. 154/

Accordingly, the Commission “agree[d] with Ameritech that “[o]perational interfaces are essential to promote viable competitive entry.” 155/

152/ Id. (emphasis added).

153/ Local Competition Order, 11 FCC Rcd at 15763-64, ¶¶ 516, 518 (footnotes omitted).

154/ Id. (footnotes omitted).

155/ Id. (footnotes omitted).

The Commission found in the Local Competition Order that lack of access to the ILECs' OSS would impair the ability of competitive carriers to provide service in several critical respects. For example, the Commission found that without access to the information maintained in the ILECs' OSS, such as "available telephone numbers, service interval information, and maintenance histories, competing carriers would operate at a significant disadvantage with respect to the incumbent." 156/ In addition, the Commission found that:

if competing carriers are unable to perform the functions of pre-ordering, ordering, provisioning, maintenance and repair, and billing for network elements and resale services in substantially the same time and manner that an incumbent can for itself, competing carriers will be severely disadvantaged, if not precluded altogether, from fairly competing. 157/

In sum, the Commission concluded that

it is absolutely necessary for competitive carriers to have access to operations support systems functions in order to successfully enter the local service market. 158/

These findings are as true now as they were when the Commission first made them. They provide ample support for a conclusion that CLECs would be impaired without access to OSS, under any reading of the term "impair." The

156/ Id. (footnotes omitted).

157/ Id. (footnotes omitted).

158/ Id. at 15766, ¶¶ 521, 522.

Commission's decision that OSS is an integral part of the nondiscrimination obligations of other Section 251(c) items only confirms this analysis. 159/

The Commission should therefore require ILECs to provide OSS as a mandatory network element.

7. Operator Services and Directory Assistance

There are CLECs today that are providing (or are interested in providing) their own operator services and directory assistance (OS/DA). There also are companies that are interested in (or actually are) providing OS/DA service to other CLECs (and thus are potential wholesale providers of this network element). 160/ It appears that a wholesale market is developing for OS/DA, and that the impairments to interchangeability may be relatively easy to remove. This network element therefore may well be a candidate for an ILEC petition to remove it from the mandatory list of elements in the near future.

That being said, OS/DA must remain a network element for now. Competitively supplied (or self-supplied) OS/DA is not yet interchangeable with ILEC-supplied OS/DA. For example, competing suppliers must have equivalent access to the same data used by the ILECs, updated as frequently, and at similar cost, for there to be interchangeability. Requesting carriers also must be able to substitute the competitively supplied OS/DA for ILEC-supplied OS/DA, no matter

159/ See, e.g., 47 C.F.R. § 51.313(c); Local Competition Order at ¶ 517.

160/ Companies such as Teltrust are interested in providing OS/DA to CLECs. The necessary nondiscriminatory inputs from ILECs are not yet available, however, to create OS/DA interchangeability today.

what their network configuration and regardless of what other ILEC network elements the requesting carrier may be using. This requires an inquiry into the operational systems that are in place that would allow CLECs to use another source of OS/DA service. For example, if a CLEC is using ILEC unbundled local switching, the CLEC needs the ability to create the appropriate line class codes in the ILEC local switch in order to use its own (or another provider's) OS/DA in conjunction with local switching. This is something within the control of the ILEC.

These operational obstacles are “impairments” that the ILEC has it within its power to remove. They are the type of factors that the Commission must consider before concluding that a competitor has other sources of supply for this network element such that it is not impaired by lack of access to the ILEC network element. Until these operational obstacles are gone, the ILEC's OS/DA must remain available to requesting carriers as a network element.

8. Dark Fiber

The Commission should include dark fiber in its mandatory list of ILEC UNEs. First, as a “facility” or piece of “equipment” in the ILECs' networks that is “used in the provision of a telecommunications service,” there is no question that dark fiber qualifies as a network element under Section 3(29) of the Act. 161/ Indeed, several federal courts already have reached that conclusion. 162/ The

161/ 47 U.S.C. § 153(29).

162/ E.g., MCI Telecommunications Corp. v. Bell south Telecommunications, Inc., 7 F.Supp.2d 674, 680 (E.D.N.C. 1998); Southwestern Bell Tel. Co. v. AT&T Communications of the Southwest, Inc., 1998 WL 6577717, *6 (W.D. Tex. 1998) (affirming the same finding by the Texas Public Utility Commission); US West

Commission in the Local Competition Order declined to decide whether to require the provision of this network element because it lacked a sufficient record. 163/ The Commission should take this opportunity to place this essential element on the list of mandatory UNEs. 164/

It is clear that without access to dark fiber, competitors would be impaired in their ability to provide advanced services. The deployment of fiber optic facilities imposes substantial costs, delays, and difficulties on competitors. Thus, just as with loops and interoffice transport, it is not always possible or economically efficient for competitors to deploy dark fiber in all the locations necessary to reach the customers that competitors wish to serve. Access to the dark fiber UNE is essential because it helps competitors like Qwest not only expand the geographic scope of their high-speed, high-bandwidth services, but also bring those services closer to the premises of customers they wish to serve. Furthermore, it gives carriers like Qwest the ability to do so (1) at costs comparable to those of the ILECs and (2) at speeds approaching those of the ILECs. It also would enable competitive providers of transport offerings to complete their networks.

Communications, Inc. v. AT&T Communications of the Pacific Northwest, Inc., 31 F.Supp.2d 839, 854 (D.Or. 1998).

163/ Local Competition Order at ¶ 450.

164/ The CompTel proposed rules do not list dark fiber as a separate network element, but instead include it in both in the loop definition and in the interoffice transmission definition. See CompTel Proposed Rules 51.319(a) and 51.319(d)(2)(i).

Competitors need access to dark fiber, as well as lit fiber, moreover, because many competitors need to be able to use their own electronics in lighting or powering the fiber. The ability to attach a CLEC's own electronics to the dark fiber UNE is important for the same reasons that many competitors wish to add their own electronics, such as DSLAMs, to the local loop to expand its speed and capabilities. A CLEC's ability to attach its own electronics enables the CLEC to better integrate the UNE into its own network. It also gives the CLEC greater control over both the UNE and its own network. Thus, access to the dark fiber UNE is just as important to a carrier's ability to provide high-speed, high-bandwidth services as is access to lit fiber.

Qwest is close to completion of its \$2.5 billion, 18,500 mile, high-capacity fiber optic network across the United States. Access to dark fiber as a network element would enable Qwest to quickly and efficiently expand the reach of its network at every level. Access to dark fiber UNEs would help expedite Qwest's efforts to bring a full complement of competitively-priced high-speed, voice, data, and video services to end user customers.

Qwest currently leases a large amount of dark fiber on its intercity network to competing carriers such as GTE and Frontier. 165/ Both of these carriers are ILECs themselves, and their ability to lease dark fiber from Qwest has given them the ability to function as facilities-based providers of intercity services

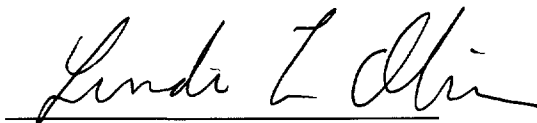
165/ See Diamond, David, "Building the Future-Proof Telco," Wired, May 1998, at 126.

without having to invest in construction of those facilities. The inability of competitive carriers to lease dark fiber from the ILECs would significantly impair the ability of competitors to provide a broad base of customers with the advanced, high-speed services that so many customers now demand. Until a competitive wholesale market develops for this network element, therefore, the Commission should include dark fiber in its list of mandatory ILEC UNEs.

CONCLUSION

For the reasons given, the Commission should adopt a "wholesale market test" to implement the standard under Section 251(d)(2). The Commission should also conclude that the original list of network elements should be readopted under the Section 251(d)(2) test, with clarifications to reflect advances in technology.

Respectfully submitted,



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ATTACHMENT: COMPTEL PROPOSED RULES

The Competitive Telecommunications Association ("CompTel") proposes the following rules for the nondiscriminatory access to unbundled network elements pursuant to Section 251(c)(3) of the Communications Act, as amended. Changes or additions to rules currently listed in 47 C.F.R. Part 51 are underlined.

§ 51.311 Nondiscriminatory access to unbundled network elements.

(a) The quality of an unbundled network element, as well as the quality of the access to the unbundled network element, that an incumbent LEC provides to a requesting telecommunications carrier shall be the same for all telecommunications carriers requesting access to that network element.

(b) The quality of an unbundled network element, as well as the quality of the access to such unbundled network element, that an incumbent LEC provides to a requesting telecommunications carrier shall be at least equal in quality to that which the incumbent LEC provides to itself. If an incumbent LEC fails to meet this requirement, the incumbent LEC must prove to the state commission that it is not technically feasible to provide the requested unbundled network element, or to provide access to the requested unbundled network element, at a level of quality that is equal to that which the incumbent LEC provides to itself.

(c) Previous successful access to an unbundled element at a particular point in a network, using particular facilities, is substantial evidence that access is technically feasible at that point, or at substantially similar points, in networks employing substantially similar facilities. Adherence to the same interface or protocol standards shall constitute evidence of the substantial similarity of network facilities.

(d) Previous successful provision of access to an unbundled element at a particular point in a network at a particular level of quality is substantial evidence that access is technically feasible at that point, or at substantially similar points, at that level of quality.

(e) Incumbent LECs shall provide CLECs access to any and all equipment and facilities used to combine network elements in the same manner that the incumbent LEC uses such equipment and facilities to combine elements in the provision of their own telecommunications services.

§ 51.3xx **Necessary and Impair**

(a) A carrier is impaired if a failure to obtain access to a network element would impose a material increase in cost, a material delay, or would materially restrict the number or scope of customers likely to receive the service any requesting carrier seeks to offer. Impairment would arise if, for example, any one of the following applied:

(1) a denial would materially increase the cost to provision, combine, or otherwise utilize a requested network element in connection with other elements of the ILEC's network or the network of an alternative provider,

(2) a denial would cause a requesting carrier to experience a material delay to provision, combine or otherwise utilize a network element in connection with other elements of the ILEC's network or the network of an alternative provider, or

(3) a network element exhibits material economies of scale and scope.

(b) A carrier's ability to provide telecommunications service will be presumptively impaired by denial to a particular network element unless the Commission finds that:

(1) network element provisioning systems are capable of delivering any other network element (or network element combinations) to alternative providers of the particular network element on terms, quantity and quality comparable to the access that the incumbent carrier receives, and

(2) for a geographic area no smaller than an Major Trading Area, there are sufficient alternative providers of the particular network element capable of supplying the network element on terms that are comparable in quality, cost and efficiency to those of the ILEC, and in quantities sufficient to result in a competitive market for such elements and facilities.

(c) Access to a network element that has a proprietary component is necessary if a material loss in the functionality of the network element would result without access to its proprietary characteristic and if the requesting carrier's ability to provide the intended service would otherwise be impaired in accordance with paragraph (a) above.

§ 51.319 Specific unbundling requirements.

An incumbent LEC shall provide nondiscriminatory access in accordance with § 51.311 of this part and section 251(c)(3) of the Act to the following network elements on an unbundled basis to any requesting telecommunications carrier for the provision of any telecommunications service:

(a) *Local Loop.* The local loop network element is defined as the transmission capability (regardless of the transmission media involved, including unused transmission media such as dark fiber) between a requesting carrier-designated point in an incumbent LEC central office (or an equivalent location designated by the requesting carrier where the loop can be connected to other ILEC network elements or the network facilities of another carrier) and an end user customer premises.

(1) The local loop network element shall encompass all features, functions and capabilities of the underlying transmission facilities used to provision the local loop network element.

(2) The purchaser of the local loop network element shall obtain exclusive use of the transmission capability of this network element.

(3) The local loop network element shall include the network interface device.

(4) Wherever it is technically possible, the incumbent LEC shall provide the local loop network element configured in a manner to support the transmission specifications of the requesting carrier.

(5) At a minimum, ILECs should offer the following types of local loops: 2-wire analog, 4-wire analog, ISDN-PRI, ISDN-BRI, xDSL capable, xDSL equipped, high capacity loops (e.g., DS1, DS3, OC 12 and higher), and dark fiber loops.

(b) *Network Interface Device.*

(1) The network interface device network element is defined as a cross-connect device used to connect loop facilities to inside wiring, along with any facilities (such as riser cable or inside wire) owned by the incumbent LEC.

(2) An incumbent LEC shall permit a requesting telecommunications carrier to

connect its own local loops to the inside wiring of premises through the incumbent LEC's network interface device. The requesting telecommunications carrier shall establish this connection through an adjoining network interface device deployed by such telecommunications carrier;

(c) Switching Capability.

(1) Local Circuit Switching Capability.

(i) The local switching capability network element is defined as:

(A) line-side facilities, which include, but are not limited to, the connection between a loop termination at a main distribution frame and a switch line card;

(B) trunk-side facilities, which include, but are not limited to, the connection between trunk termination at a trunk-side cross-connect panel and a switch trunk card; and

(C) all features, functions, and capabilities of the switch, which include, but are not limited to:

(1) the basic switching function of connecting lines to lines, lines to trunks, trunks to lines, and trunks to trunks, as well as the same basic capabilities made available to the incumbent LEC's customers, such as a telephone number, white page listing, and dial tone; and

(2) all other features that the switch is capable of providing, including but not limited to custom calling, custom local area signaling service features, and Centrex, as well as any technically feasible customized routing functions provided by the switch.

(ii) An incumbent LEC shall transfer a customer's local service to a competing carrier within a time period no greater than the interval within which the incumbent LEC currently transfers end users between interexchange carriers, if such transfer requires only a change in the incumbent LEC's software;

(2) Tandem Circuit Switching Capability. The tandem circuit switching capability network element is defined as:

(i) trunk-connect facilities, including but not limited to the connection between trunk termination at a cross-connect panel and a switch trunk card;

(ii) the basic switching function of connecting trunks to trunks; and

(iii) the functions that are centralized in tandem switches (as distinguished from separate end-office switches), including but not limited to call recording, the routing of calls to operator services, and signaling conversion features;

(3) Packet Switching Capability. The packet switching capability network element is defined as the assembling, disassembling, addressing, conversion or routing of digital information in packet form. The packet switching capability network element shall include all features, functions and capabilities of the packet switching and/or routing devices.

(d) Interoffice Transmission Facilities.

(1) Interoffice transmission facilities are defined as incumbent LEC transmission facilities dedicated to a particular customer or carrier, or shared by more than one customer or carrier including the ILEC, that provide telecommunications between wire centers owned by incumbent LECs or requesting telecommunications carriers, or between switches owned by incumbent LECs or requesting telecommunications carriers.

(2) The incumbent LEC shall:

(i) provide a requesting telecommunications carrier exclusive use of interoffice transmission facilities, including unused transmission media such as dark fiber, dedicated to a particular customer or carrier, or use of the features, functions, and capabilities of interoffice transmission facilities shared by more than one customer or carrier, including the ILEC;

(ii) provide all technically feasible transmission facilities, features, functions, and capabilities that the requesting telecommunications carrier could use to provide telecommunications services;

(iii) permit, to the extent technically feasible, a requesting telecommunications carrier to connect such interoffice facilities to equipment designated by the requesting telecommunications carrier, including, but not limited to, the requesting telecommunications carrier's collocated facilities; and

(iv) permit, to the extent technically feasible, a requesting telecommunications carrier to obtain the functionality provided by the incumbent LEC's digital cross-connect systems in the same manner that the incumbent LEC provides such functionality to interexchange carriers;

(3) The incumbent LEC shall provide a requesting telecommunications carrier use of packet transport defined as the transport of packetized information between (and including) two or more packet devices, or between interconnected transmission facilities which terminate at a packet device, including any intermediate routing or switching, without regard to the protocol or packet definition scheme involved. The packet transport network element shall include all features, functions and capabilities of the ILEC's packet transport network.

(e) Signaling Networks and Call-Related Databases.

(1) Signaling Networks.

(i) Signaling networks include, but are not limited to, signaling links and signaling transfer points.

(ii) When a requesting telecommunications carrier purchases unbundled switching capability from an incumbent LEC, the incumbent LEC shall provide access to its signaling network from that switch in the same manner in which it obtains such access itself.

(iii) An incumbent LEC shall provide a requesting telecommunications carrier with its own switching facilities access to the incumbent LEC's signaling network for each of the requesting telecommunications carrier's switches. This connection shall be made in the same manner as an incumbent LEC connects one of its own switches to a signal transfer point.

(iv) Under this paragraph, an incumbent LEC is not required to unbundle

those signaling links that connect service control points to switching transfer points or to permit a requesting telecommunications carrier to link its own signal transfer points directly to the incumbent LEC's switch or call-related databases;

(2) Call-Related Databases.

(i) Call-related databases are defined as databases, other than operations support systems, that are used in signaling networks for billing and collection or the transmission, routing, or other provision of a telecommunications service.

(ii) For purposes of switch query and database response through a signaling network, an incumbent LEC shall provide access to its call-related databases, including, but not limited to, the Line Information Database, Toll Free Calling database, downstream number portability databases, and Advanced Intelligent Network databases, by means of physical access at the signaling transfer point linked to the unbundled database.

(iii) An incumbent LEC shall allow a requesting telecommunications carrier that has purchased an incumbent LEC's local switching capability to use the incumbent LEC's service control point element in the same manner, and via the same signaling links, as the incumbent LEC itself.

(iv) An incumbent LEC shall allow a requesting telecommunications carrier that has deployed its own switch, and has linked that switch to an incumbent LEC's signaling system, to gain access to the incumbent LEC's service control point in a manner that allows the requesting carrier to provide any call-related, database-supported services to customers served by the requesting telecommunications carrier's switch.

(v) A state commission shall consider whether mechanisms mediating access to an incumbent LEC's Advanced Intelligent Network service control points are necessary, and if so, whether they will adequately safeguard against intentional or unintentional misuse of the incumbent LEC's Advanced Intelligent Network facilities.

(vi) An incumbent LEC shall provide a requesting telecommunications carrier with access to call-related databases in a manner that complies with section 222 of the Act;

(3) Service Management Systems.

(A) A service management system is defined as a computer database or system not part of the public switched network that, among other things:

(1) interconnects to the service control point and sends to that service control point the information and call processing instructions needed for a network switch to process and complete a telephone call; and

(2) provides telecommunications carriers with the capability of entering and storing data regarding the processing and completing of a telephone call.

(B) An incumbent LEC shall provide a requesting telecommunications carrier with the information necessary to enter correctly, or format for entry, the information relevant for input into the particular incumbent LEC service management system.

(C) An incumbent LEC shall provide a requesting telecommunications carrier the same access to design, create, test, and deploy Advanced Intelligent Network-based services at the service management system, through a service creation environment, that the incumbent LEC provides to itself.

(D) A state commission shall consider whether mechanisms mediating access to Advanced Intelligent Network service management systems and service creation environments are necessary, and if so, whether they will adequately safeguard against intentional or unintentional misuse of the incumbent LEC's Advanced Intelligent Network facilities.

(E) An incumbent LEC shall provide a requesting telecommunications carrier access to service management systems in a manner that complies with section 222 of the Act;

(f) Operations Support Systems Functions.

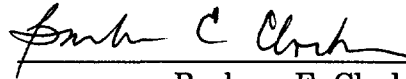
(1) Operations support systems functions consist of pre-ordering, ordering, provisioning, maintenance and repair, and billing functions supported by an incumbent LEC's databases and information.

(2) An incumbent LEC that does not currently comply with this requirement shall do so as expeditiously as possible, but, in any event, no later than January 1, 1997; and

(g) Operator Services and Directory Assistance. An incumbent LEC shall provide access to operator service and directory assistance facilities where technically feasible.

CERTIFICATE OF SERVICE

I, Barbara E. Clocker, hereby certify that on this 26th day of May, 1999, a copy of the Comments of Qwest Communications Corporation filed in CC Docket No. 96-98, was hand delivered to the parties listed below.


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